

ABSTRACT

Locations of IC tags affixed to items are automatically recognized without requiring interrogators or antennas are allocated at respective inventory locations.

5 To attain this object, interrogator 1 firstly transmits a unique ID readout command specifying read range, and corresponding IC tags 2a, 2b, 2c sequentially reply their unique IDs (Xa), (Xb), (Xc) respectively.

At the same time, interrogator 1 transmits a probe signal send out command specifying ID, and corresponding IC tags 2a, 2b, 2c sequentially send out probe signals respectively.

10 IC tag 2 that detects a probe signal with reception strength more than a predetermined level stores in its memory IDs (Xa), (Xb), (Xc) that interrogator 1 specified as adjacent ID.

Then, interrogator 1 transmits an adjacent ID readout command specifying ID, and corresponding IC tags 2a, 2b, 2c sequentially reply adjacent IDs (Xb), (Xa.Xc), (Xb) stored in their memory respectively.

15 Lastly, all possible combinations (Xa-Xb), (Xb-Xa), (Xb-Xc), (Xc-Xb) of unique IDs (Xa), (Xb), (Xc) and adjacent IDs (Xb), (Xa.Xc), (Xb) that controller 3 has collected via interrogator 1 are obtained and any identical combinations are excluded so that (Xa-Xb), (Xb-Xc) remain as final combinations, and the final combinations having one side in common are joined to produce a link pattern of ID information.

20 Thus, it is understood that IC tags 2a, 2b, 2c exist in the same communication area B, and are arranged in order of 2a, 2b, 2c.